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## C-A OPERATIONS PROCEDURES MANUAL

### 9.1.14 Procedure for Establishing NMC Response in a Beam Line

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#### Hand Processed Changes

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Approved: \_\_\_\_\_ **Signature On File** \_\_\_\_\_  
Collider-Accelerator Department Chairman Date

D. Beavis

## 9.1.14 Procedure for Establishing NMC Response in a Beam Line

### 1. Purpose

To provide instructions for Liaison Physicists (LP) and Radiological Control Technicians (RCT) for establishing the NMC response as a function of particle beam intensity in a beam line prior to setting the operating limit. For NMC units in which the alert limit is used to set a lower operating limit, then the response of the alert level must be established. In this case replace the word alarm level with alert level in the procedure.

### 2. Responsibilities

- 2.1 The [Liaison Physicist](#) is responsible for ensuring a stable beam of known intensity is available.
- 2.2 The Radiological Control Technician (RCT) is responsible for determining the alarm setting for a particular particle intensity.

### 3. Prerequisites

- 3.1 There must exist an associated beam line check-off list.
- 3.2 This procedure requires a [Liaison Physicist](#) and a RCT.

### 4. Precautions

Area surveys should be conducted prior to this procedure to ensure that this procedure does not produce unnecessary dose or risk to areas that can be occupied by personnel.

### 5. Procedures

- 5.1 The Liaison Physicist will ensure that a stable beam condition has been established.
- 5.2 The [Liaison Physicist](#) will establish a beam intensity of approximately 1/10 of the intended operating limit stated on the associated beam line check-off list.
- 5.3 The [Liaison Physicist](#) will record the particle intensity and alarm level.
- 5.4 Repeat steps 1 and 3 until a factor of 10 times (if possible) the operating limit stated on the associated beam line check-off list is reached with a minimum of two intensity points per decade.

- 5.5 Plot the data.
- 5.6 The response curve should allow for the trip limit to be set with an accuracy of 50% of the designated operating limit.
- 5.7 Attach the data and the plot to the associated beam line check-off list.
- 5.8 Exception to this procedure must be approved by the [Liaison Physicist](#), an RCT and the C-A Radiation Safety Committee (RSC) Chairman, or designee.

**6. Documentation**

Data and plot attached to associated beam line check-off list.

**7. References**

None.

**8. Attachments**

None.